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Name _____

Section H J

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Mathematics 1553

Written Homework 10

Prof. Margalit

22 April 2016

1. The goal of this assignment is to find the equation of the best-fit plane $z = C + Dx + Ey$ for the values $b = (0, 1, 3, 4)$ observed at the corners of a square:

$$(x_1, y_1) = (1, 0)$$

$$(x_2, y_2) = (0, 1)$$

$$(x_3, y_3) = (-1, 0)$$

$$(x_4, y_4) = (0, -1).$$

The four equations $C + Dx_i + Ey_i = b_i$ give a matrix equation $Ax = b$. What is A ?

Solve for $x = (C, D, E)$ to find the equation of the plane.

Check that the height of your plane at $(x, y) = (0, 0)$ is the average of the four entries of b .

YES

NO